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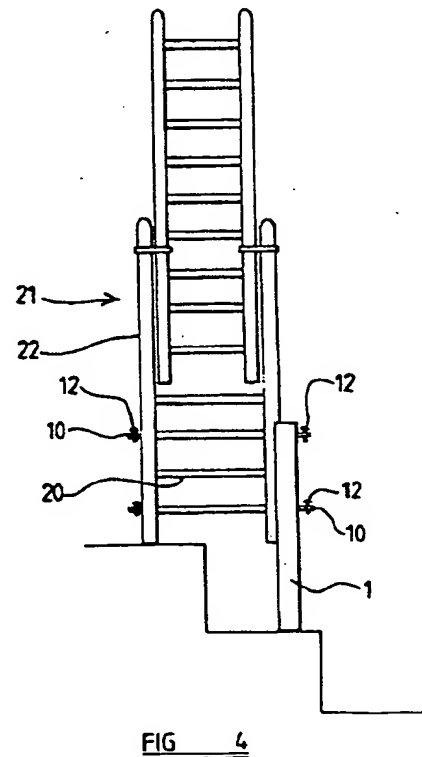
(52) UK CL (Edition O )  
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GB 2151687 A GB 2057041 A GB 2055943 A  
US 5232067 A US 5094320 A US 4852689 A  
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(58) Field of Search  
UK CL (Edition O ) E1S SLW3  
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(54) An accessory for a ladder

(57) An accessory for a ladder is in the form of an elongate element 1 which is to be connected to a stile of the ladder with a predetermined length of the elongate element extending beyond the end of the stile of the ladder, thus enabling the ladder to be used safely, for example, on uneven ground or on a flight of steps. The elongate element has a set of apertures which are aligned with a hollow ladder rung for a fastener. The end part of the elongate element has a coating of high friction material.



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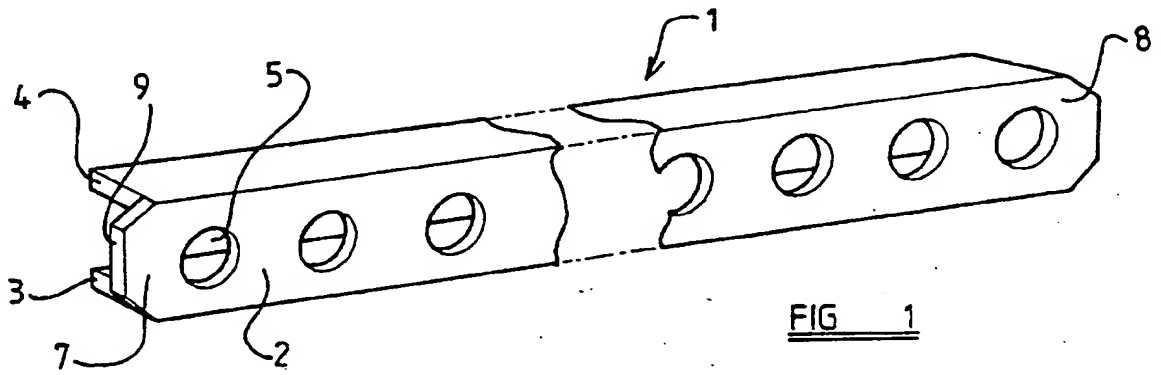


FIG 1

FIG 2

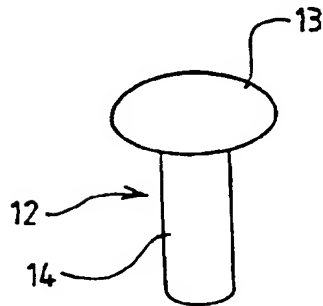
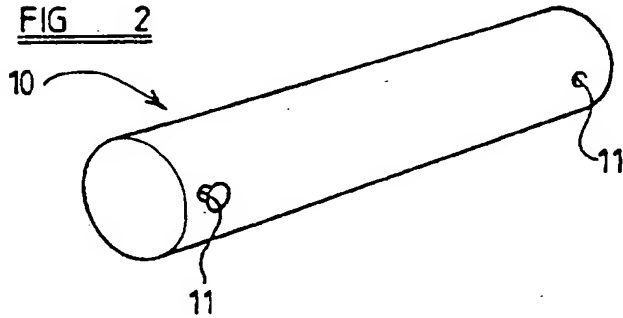


FIG 3

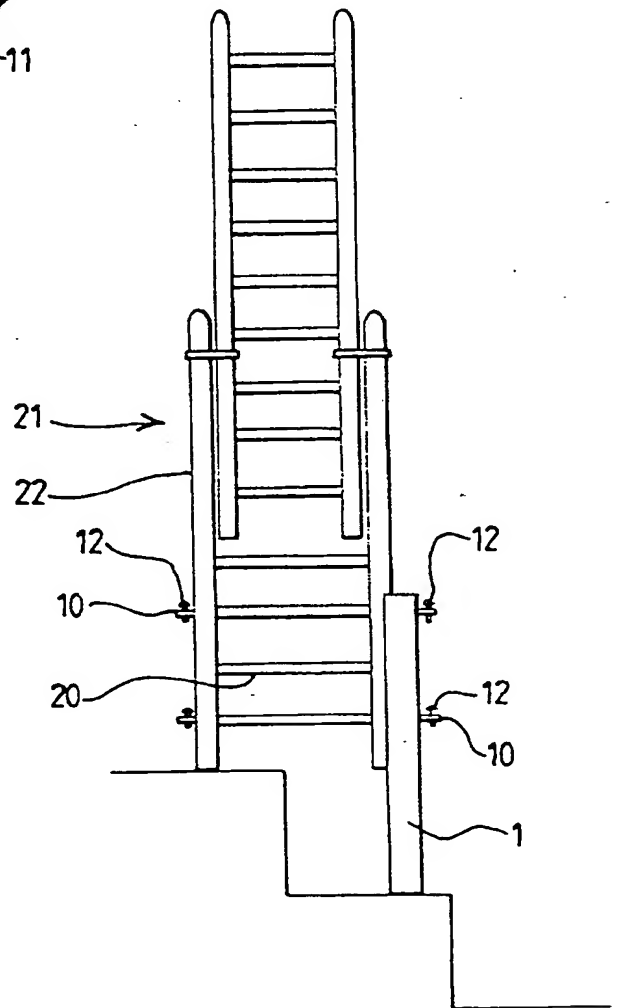


FIG 4

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DESCRIPTION OF INVENTION

"IMPROVEMENTS IN OR RELATING TO AN ACCESSORY FOR A LADDER"

THE PRESENT INVENTION relates to an accessory for a ladder, and more particularly relates to an accessory for a ladder such as an extension ladder.

A difficulty is often encountered when using a ladder, such as an extension ladder, on uneven ground or on steps or stairs.

If a ladder, such as an extension ladder, is to be positioned in a safe manner, the rungs of the ladders should be horizontal and the stiles of the ladder should be vertical. On uneven ground or on stairs or steps, for example, such a positioning of the ladder may be impossible.

The present invention seeks to provide an accessory for use with a ladder, which, in use, enables the ladder to be used in a safe manner on uneven ground, or on stairs or steps, for example.

According to this invention there is provided an accessory for a ladder, the accessory comprising an elongate element and means adapted to secure the elongate element at a preselected position to a stile of a ladder with a predetermined length of the elongate element extending beyond the end of the stile of the ladder.

Preferably an end part of the elongate element is provided with an element of high-friction material.

Conveniently the elongate element is provided with a plurality of apertures, the connecting means comprising two transversely extending members, each adapted to extend through an aperture in the elongate element and also a rung of a ladder to which the elongate element is to be connected, there being securing means to secure the elongate members in position.

Advantageously the securing means comprise means provided with enlarged heads and shanks, the shanks being adapted to pass through diametrically extending bores provided in the elongate members.

Preferably the elongate element defines a front face defining said apertures and two rearwardly extending arms so that the elongate element is of channel form, the channel being adapted to receive the stile of a ladder.

Conveniently the holes in the elongate element are substantially evenly spaced, the hole at one end of the elongate element being closer to the said end than the hole at the other end of the elongate element being closer to the said end than the hole at the other end of the elongate element is to that other end.

The invention also relates to an accessory as described above in combination with a ladder, and also relates to an accessory as described above in combination with a ladder, and also relates to an accessory as described above mounted on a ladder.

The invention also relates to a method of preparing a ladder for use, the method comprising the steps of securing to one of the stiles of the ladder an elongate element with part of the elongate element extending, to a predetermined extent, beyond the end of the said stile of the ladder.

Preferably the elongate element is provided with a plurality of apertures therein, the elongate element being secured to the ladder by aligning apertures in the elongate element with hollow rungs of the ladder and passing an elongate member through the said aligned apertures and the hollow rungs of the ladder, and securing the elongate members in position.

In order that the invention may be more readily understood, and so that further features thereof may be appreciated, the invention will now be described, by way of example, with reference to the accompanying drawings in which:

FIGURE 1 is a perspective view, with part cut away, of a first element of an accessory in accordance with the invention,

FIGURE 2 is a perspective view of a second part of an accessory in accordance with the invention,

FIGURE 3 is a view of a further part of an accessory in accordance with the invention, and

FIGURE 4 illustrates the accessory in accordance with the invention when in use on a ladder which is located on a set of steps.

As will be described hereinafter in greater detail, an accessory in accordance with the invention comprises an elongate element, which is associated with means to fasten or secure the elongate element to one of the stiles of the ladder, with a predetermined length of the elongate element then extending beneath the lower end of the stile. Thus, when the accessory is used with a ladder, one of the stiles of the ladder is effectively extended or lengthened by a predetermined extent. This enables the ladder to be used safely on rough ground or on steps or stairs.

Turning now to Figure 1 of the accompanying drawings, a first component 1 of an accessory in accordance with the invention comprises an elongate element. The illustrated elongate element is of channel form presenting a front face 2 and two rearwardly extending arms 3,4 aligned respectively with the upper and lower edges of the front face 2.

A plurality of apertures 5 are formed in the front face, the apertures being evenly spaced along the length of the elongate element.

It is to be noted, however, that the aperture shown at the right-hand end of the elongate element is closer to the end of the elongate element than is the aperture 5 shown at the left-hand end of the elongate element. The reason for this will become clear from the following description.

It is to be observed that each end of the elongate face 2 extends slightly beyond the ends of the rearwardly extending arms 3,4 which form the channel, to provide projecting portions 7,8, the projecting forces define laterally directed end faces, such as the end face 9, which

may be coated with a high friction material, such as an element of rubber or the like.

The spacing between the rearwardly extending arms 3,4 of the channel is such that a stile of a ladder may be accommodated as a sliding fit within the channel.

The elongate element as shown in Figure 1 may be of any appropriate length, and a length of approximately 1 metre may be found to be convenient.

Figure 2 illustrates an elongate member 10 in the form of a bar. The bar 10 has an outer diameter which is equivalent to the diameter of the aperture 5. The bar 10, as will become clear from the following description, is intended to pass through the aperture 5 and through a hollow rung of a ladder. The accessory being described will be provided with two members such as the bar 10. It is to be observed that transverse bores 11 are provided in the bar 10 at selected positions.

The member 10 may be made of any appropriate material and may comprise a tube.

Figure 3 illustrates a fastener, which may be in the form of a split pin, comprising an enlarged head 12 and an elongate shank 13. The shank 13 is adapted to be received within a transverse bore 11 as formed in the bar 10. A plurality of fasteners as shown in Figure 3 will be provided to form part of the described accessory.

If reference is now made to Figure 4, it will be understood that when a ladder is to be used with an accessory as herein described, initially the elongate element is located so that one of the stiles of the ladder

is received within the channel forming the elongate element. The elongate element is then moved axially of the stile until firstly an appropriate length of the elongate element extends beyond the lower end of the stile and secondly, two of the apertures 5 are aligned with two rungs of the ladder.

It is to be appreciated that a fine degree of adjustment may be achieved, since the apertures 5 are relatively close to each other. If it is found that with the channel one way round, when a first set of apertures are aligned with selected rungs, the protruding portion of the elongate element is too great, whereas the next adjacent sets of apertures aligned with the rungs, the protruding portion of the elongate element is insufficient, the elongate element may be reversed and due to the difference in distance between the end apertures provided at the opposed ends of the elongate element and the actual respective ends of the elongate element, a satisfactory adjustment should then be achieved.

When the elongate element has been positioned appropriately on the stile, with selected apertures aligned with selected rungs, the bars 10 are inserted through two of the apertures 5 and through the rungs 20 of the ladder 21 aligned therewith. When the bars 10 have been located in place, the fasteners 12 may be inserted in the transverse bores 11. The transverse bores 11 are so located that the fasteners engage, respectively, the stile 22 of the ladder to which the elongate element 1 is not connected, and the face 2 of the elongate element 1. Thus the elongate element 1 is retained securely in position.



Whilst one embodiment of the invention has been described by way of example, it is to be appreciated that many modifications may be effected without departing from the scope of the invention.

One particular technique has been disclosed for securing the elongate element to the ladder involving a member passing through a hollow rung of a ladder. Such a member may be secured in position by many means other than the described transverse bore and locking element. For example, the end portion of the rod may be threaded to receive a wing nut or the like. Alternatively, one end of the member may be provided with an enlarged head, and the other end of the member may be provided with the fastening device such as the nut. It is to be appreciated that embodiments of the invention may be devised for use with ladders which do not have hollow rungs, and consequently means may be provided adapted to embrace the elongate element and the stile of the ladder to which the elongate element is to be connected, thus securing together the elongate element and the stile of the ladder.

The invention relates to a method of preparing a ladder for use comprising the steps of securing to the ladder an elongate element to effectively lengthen one stile of the ladder.

CLAIMS:

1. An accessory for a ladder, the accessory comprising an elongate element and means adapted to secure the elongate element at a preselected position to a stile of a ladder with a predetermined length of the elongate element extending beyond the end of the stile of the ladder.
2. An accessory according to Claim 1 wherein an end part of the elongate element is provided with an element of high-friction material.
3. An accessory according to Claim 1 or Claim 2 wherein the elongate element is provided with a plurality of apertures, the connecting means comprising two transversely extending members, each adapted to extend through an aperture in the elongate element and also a rung of a ladder to which the elongate element is to be connected, there being securing means to secure the elongate members in position.
4. An accessory according to Claim 3 wherein the securing means comprise means provided with enlarged heads and shanks, the shanks being adapted to pass through diametrically extending bores provided in the elongate members.
5. An accessory according to Claim 3 or 4 to wherein the elongate element defines a front face defining said apertures and two rearwardly extending arms so that the elongate element is of channel form, the channel being adapted to receive the stile of a ladder.

6. An accessory according to any one of Claims 3 to 5 wherein the holes in the elongate element are substantially evenly spaced, the hole at one end of the elongate element being closer to the said end than the hole at the other end of the elongate element is to that other end.
7. An accessory according to any one of the preceding Claims in combination with a ladder.
8. An accessory according to any one of Claims 1 to 6 mounted on a ladder.
9. A method of preparing a ladder for use, the method comprising the steps of securing to one of the stiles of the ladder an elongate element with part of the elongate element extending, to a predetermined extent, beyond the end of the said stile of the ladder.
10. A method of preparing a ladder for use according to Claim 9 wherein the elongate element is provided with a plurality of apertures therein, the elongate element being secured to the ladder by aligning apertures in the elongate element with hollow rungs of the ladder and passing an elongate member through the said aligned apertures and the hollow rungs of the ladder, and securing the elongate members in position.
11. An accessory for a ladder substantially as herein described with reference to and as shown in the accompanying drawings.
12. A method of preparing a ladder for use substantially as herein described with reference to the accompanying drawings.

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13. Any novel feature or combination of features disclosed herein.



# The Patent Office

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Application No: GB 9508815.9  
Claims searched: 1-12

Examiner: Tony Mitchell  
Date of search: 10 June 1996

## Patents Act 1977 Search Report under Section 17

### Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.O): E1S (SLW3)

Int Cl (Ed.6): E06C 7/44

Other:

### Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	GB 2271602 A (CLARK)	1,2,7-9
X	GB 2197017 A (DAVIES)	1,7-9
X	GB 2188083 A (IBRAR)	1,2,7-9
X	GB 2151687 A (SZUCS)	1,2,7-9
X	GB 2057041 A (TOWLER)	1,7-9
X	GB 2055943 A (STONELANDS)	1,7-9
X	US 5232067 (GRIFFITHS) see figure 2	1-3,7-9,10
X	US 5094320 (DEITZ)	1-3,7-9,10
X	US 4852689 (ERION)	1-3,5-9,10
X	US 3998293 (RAIA)	1-3,5-9,10

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